

Ask the experts:

Lorna Driver-Davies:

1. Jin, Hongyu & Niu, Zhaoyuan & Zhao, Xinyue. (2024). The Association between Dietary fiber intake and pelvic inflammatory disease: Findings from the NHANES 2015-2018. 10.21203/rs.3.rs-5742753/v1.
2. Djuşe ME, Prinelli F, Camboni T, Ceccarani C, Consolandi C, Conti S, Dall'Asta M, Danesi F, Laghi L, Curatolo FM, Morselli S, Foschi C, Castellano P, Marangoni A and Severgnini M (2025) Dietary habits and vaginal environment: can a beneficial impact be expected?. *Front. Cell. Infect. Microbiol.* 15:1582283. doi: 10.3389/fcimb.2025.1582283
- 3 & 4. Czerniak J, Ciebiera M, Zeber-Lubecka N, Olcha P. Dietary Fiber in Endometriosis: Mechanisms, Evidence, and Potential Clinical Benefits-Up-to-Date Review. *Nutrients.* 2026 Feb 21;18(4):690. doi: 10.3390/nu18040690. PMID: 41754207; PMCID: PMC12943093.
5. Halfon P, Estrade JP, Penaranda G, Choucroun N, Bouaziz J, Nicolas-Boluda A, Retornaz F, Gurriet B, Plauzolles A. High prevalence of small intestinal bacterial overgrowth and intestinal methanogen overgrowth in endometriosis patients: A case-control study. *Int J Gynaecol Obstet.* 2025 Jul;170(1):284-291. doi: 10.1002/ijgo.70005. Epub 2025 Feb 17. PMID: 39959963.

Lindsay Powers:

<https://pubmed.ncbi.nlm.nih.gov/28735826/>

affron® a novel saffron extract (*Crocus sativus* L.) improves mood in healthy adults over 4 weeks in a double-blind, parallel, randomized, placebo-controlled clinical trial <https://www.nutraingredients.com/Article/2025/08/01/saffron-extract-mood-boosting-benefits-for-dietary-supplement-formulations/>

<https://pubmed.ncbi.nlm.nih.gov/18271889/>

Crocus sativus L. (saffron) in the treatment of premenstrual syndrome: a double-blind, randomised and placebo-controlled trial

<https://pmc.ncbi.nlm.nih.gov/articles/PMC8408316/>

The Effects of a Saffron Extract (affron®) on Menopausal Symptoms in Women during Perimenopause: A Randomised, Double-Blind, Placebo-Controlled Study

<https://pubmed.ncbi.nlm.nih.gov/32056539/>

Effects of saffron on sleep quality in healthy adults with self-reported poor sleep: a randomised, double-blind, placebo-controlled trial

<https://pubmed.ncbi.nlm.nih.gov/22852021/>

A longitudinal follow-up study of saffron supplementation in early age-related macular degeneration: sustained benefits to central retinal function

Guide to microbiome feature:

Christine Bailey:

1. Qin J, Li R, Raes J, Arumugam M, Burgdorf KS, Manichanh C, Nielsen T, Pons N, Levenez F, Yamada T, Mende DR, Li J, Xu J, Li S, Li D, Cao J, Wang B, Liang H, Zheng H, Xie Y, Tap J, Lepage P, Bertalan M, Batto JM, Hansen T, Le Paslier D, Linneberg A, Nielsen HB, Pelletier E, Renault P, Sicheritz-Ponten T, Turner K, Zhu H, Yu C, Li S, Jian M, Zhou Y, Li Y, Zhang X, Li S, Qin N, Yang H, Wang J, Brunak S, Doré J, Guarner F, Kristiansen K, Pedersen O,

- Parkhill J, Weissenbach J; MetaHIT Consortium; Bork P, Ehrlich SD, Wang J. A human gut microbial gene catalogue established by metagenomic sequencing. *Nature*. 2010 Mar 4;464(7285):59-65. doi: 10.1038/nature08821. PMID: 20203603; PMCID: PMC3779803.
2. Sender R, Fuchs S, Milo R. Revised Estimates for the Number of Human and Bacteria Cells in the Body. *PLoS Biol*. 2016 Aug 19;14(8):e1002533. doi: 10.1371/journal.pbio.1002533. PMID: 27541692; PMCID: PMC4991899.
 3. Cani PD, Possemiers S, Van de Wiele T, Guiot Y, Everard A, Rottier O, Geurts L, Naslain D, Neyrinck A, Lambert DM, Muccioli GG, Delzenne NM. Changes in gut microbiota control inflammation in obese mice through a mechanism involving GLP-2-driven improvement of gut permeability. *Gut*. 2009 Aug;58(8):1091-103. doi: 10.1136/gut.2008.165886. Epub 2009 Feb 24. PMID: 19240062; PMCID: PMC2702831.
 4. Cryan JF, O'Riordan KJ, Cowan CSM, Sandhu KV, Bastiaansen TFS, Boehme M, Codagnone MG, Cusotto S, Fulling C, Golubeva AV, Guzzetta KE, Jaggar M, Long-Smith CM, Lyte JM, Martin JA, Molinero-Perez A, Moloney G, Morelli E, Morillas E, O'Connor R, Cruz-Pereira JS, Peterson VL, Rea K, Ritz NL, Sherwin E, Spichak S, Teichman EM, van de Wouw M, Ventura-Silva AP, Wallace-Fitzsimons SE, Hyland N, Clarke G, Dinan TG. The Microbiota-Gut-Brain Axis. *Physiol Rev*. 2019 Oct 1;99(4):1877-2013.
 5. Drossman DA, Hasler WL. Rome IV Functional GI disorders: disorders of gut-brain interaction. *Gastroenterology*. 2016;150(6):1257–1261. doi:10.1053/j.gastro.2016.03.035
 6. Round JL, Mazmanian SK. The gut microbiota shapes intestinal immune responses during health and disease. *Nature Reviews Immunology*. 2009;9(5):313–323. doi:10.1038/nri2515
 7. Sonnenburg JL, Bäckhed F. Diet–microbiota interactions as moderators of human metabolism. *Nature*. 2016;535(7610):56–64. doi:10.1038/nature18846
 8. David, L., Maurice, C., Carmody, R. *et al*. Diet rapidly and reproducibly alters the human gut microbiome. *Nature* **505**, 559–563 (2014). <https://doi.org/10.1038/nature12820>
 9. McDonald D, Hyde E, Debelius JW, *et al*. American Gut: an open platform for citizen science microbiome research. *mSystems*. 2018;3(3):e00031-18. doi:10.1128/mSystems.00031-18
 10. Wastyk HC, Fragiadakis GK, Perelman D, Dahan D, Merrill BD, Yu FB, Topf M, Gonzalez CG, Van Treuren W, Han S, Robinson JL, Elias JE, Sonnenburg ED, Gardner CD, Sonnenburg JL. Gut-microbiota-targeted diets modulate human immune status. *Cell*. 2021 Aug 5;184(16):4137-4153.e14. Jernberg C, Löfmark S, Edlund C,
 11. Jansson JK. Long-term impacts of antibiotic exposure on the human intestinal microbiota. *Microbiology*. 2010;156(Pt 11):3216–3223. doi:10.1099/mic.0.040618-0

Adrienne Benjamin:

¹ Reynoso-Garcia J *et al* 2022. A complete guide to human microbiomes: Body niches, transmission, development, dysbiosis, and restoration. *Frontiers in Systems Biology*

Medicinal mushrooms feature:

Sophie Barrett:

1. Wasser SP. Medicinal mushroom science: Current perspectives, advances, evidences, and challenges. *Biomed J.* 2014;37(6):345-56.
2. Chan GC, Chan WK, Sze DM. The effects of beta-glucan on human immune and cancer cells. *J Hematol Oncol.* 2009;2:25.
3. Boh B, Berovic M, Zhang J, Zhi-Bin L. Ganoderma lucidum and its pharmaceutically active compounds. *Biotechnol Annu Rev.* 2007;13:265-301.
4. Nagano M, Shimizu K, Kondo R, et al. Effects of Hericium erinaceus on anxiety and depressive states. *Biomed Res.* 2010;31(4):231-7.
5. Paterson RR. Cordyceps - a traditional Chinese medicine and another fungal therapeutic biofactory? *Phytochemistry.* 2008;69(7):1469-95.
6. Guggenheim AG, Wright KM, Zwickey HL. Immune Modulation From Five Major Medicinal Mushrooms: Application to Integrative Oncology. *Integr Med (Encinitas).* 2014;13(1):32-44.
7. Valverde ME, Hernández-Pérez T, Paredes-López O. Edible Mushrooms: Improving Human Health and Promoting Quality Life. *Int J Microbiol.* 2015;2015:376387.
8. Cui XY, Chen HY, Luo YJ, et al. Ganoderma lucidum extract prolongs sleep time in rats via GABAergic mechanisms. *J Ethnopharmacol.* 2012;139(3):796-800.
9. Mori K, Obara Y, Hirota M, et al. Nerve growth factor-inducing activity of Hericium erinaceus in 1321N1 human astrocytoma cells. *Biol Pharm Bull.* 2008;31(9):1727-32.
10. Tuli HS, Sandhu SS, Sharma AK. Pharmacological and therapeutic potential of Cordyceps with special reference to Cordycepin. *3 Biotech.* 2014;4(1):1-12.

Mentoring scheme:

Alharbi, F., Naumovski, N., & McFarlane, R. A. (2025). Traditional place-based diets and their effects on healthy and sustainable food transitions: a systematic literature review. *Public Health Nutrition*, 1–28. <https://doi.org/10.1017/s1368980025101274>

Alt, K. W., Al-Ahmad, A., & Woelber, J. P. (2022). Nutrition and Health in Human Evolution—Past to Present. *Nutrients*, 14(17), 3594.

<https://doi.org/10.3390/nu14173594>

BHF. (2025). *Our vision is a world free from the fear of heart and circulatory diseases.* UK Factsheet. <https://www.bhf.org.uk/-/media/files/for-professionals/research/heart-statistics/bhf-cvd-statistics-uk-factsheet.pdf?rev=b88610e2495b4564821ab365bd8e1b2e&hash=294E7519486335830B73739235600CE7>

830B73739235600CE7

Cambeses-Franco, C., Gude, F., Benítez-Estévez, A. J., González-García, S., Leis, R., Sánchez-Castro, J., María Teresa Moreira, Feijoo, G., & Mar Calvo-Malvar.

(2024). Traditional Atlantic Diet and Its Effect on Health and the Environment. *JAMA Network Open*, 7(2), e2354473–e2354473.

<https://doi.org/10.1001/jamanetworkopen.2023.54473>

Carrera-Bastos, P., Fontes-Villalba, M., O’Keefe, J., Lindeberg, S., & Cordain, L.

(2011). The western diet and lifestyle and diseases of civilization. *Research Reports in Clinical Cardiology*, 15. <https://doi.org/10.2147/rrcc.s16919>

Clemente-Suárez, V. J., Beltrán-Velasco, A. I., Redondo-Flórez, L., Martín-

Rodríguez, A., & Tornero-Aguilera, J. F. (2023). Global Impacts of Western Diet and

Its Effects on Metabolism and Health: a Narrative Review. *Nutrients*, 15(12), 2749–2749. <https://doi.org/10.3390/nu15122749>

Cordain, L., Eaton, S. B., Sebastian, A., Mann, N., Lindeberg, S., Watkins, B. A., O’Keefe, J. H., & Brand-Miller, J. (2005). Origins and evolution of the Western diet: health implications for the 21st century. *The American Journal of Clinical Nutrition*, 81(2), 341–354. <https://doi.org/10.1093/ajcn.81.2.341>

Diabetes UK. (2025). *One in five adults now live with diabetes or prediabetes in the UK*. Diabetes UK. <https://www.diabetes.org.uk/about-us/news-and-views/one-five-adults-now-live-diabetes-or-prediabetes-uk>

FFCC. (2024). *Unhealthy food costing UK over £250 billion*. Food, Farming and Countryside Commission. <https://ffcc.co.uk/news-and-press/unhealthy-food-costing-uk-billions>

González Olmo, B. M., Butler, M. J., & Barrientos, R. M. (2021). Evolution of the Human Diet and Its Impact on Gut Microbiota, Immune Responses, and Brain Health. *Nutrients*, 13(1), 196. <https://doi.org/10.3390/nu13010196>

Jew, S., AbuMweis, S. S., & Jones, P. J. H. (2009). Evolution of the Human Diet: Linking Our Ancestral Diet to Modern Functional Foods as a Means of Chronic Disease Prevention. *Journal of Medicinal Food*, 12(5), 925–934. <https://doi.org/10.1089/jmf.2008.0268>

Leroy, F. (2023). The role of meat in the human diet: evolutionary aspects and nutritional value. *Animal Frontiers*, 13(2), 11–18. <https://doi.org/10.1093/af/vfac093>

Li, F., Armet, A. M., Korpela, K., Liu, J., Quevedo, R. M., Asnicar, F., Seethaler, B., Rusnak, T. B. S., Cole, J. L., Zhang, Z., Zhao, S., Wang, X., Gagnon, A., Deehan, E. C., Mota, J. F., Bakal, J. A., Greiner, R., Knights, D., Segata, N., & Bischoff, S. C. (2025). Cardiometabolic benefits of a non-industrialized-type diet are linked to gut microbiome modulation. *Cell*. <https://doi.org/10.1016/j.cell.2024.12.034>

Macchione, I. G., Lopetuso, L. R., Ianiro, G., Napoli, M., Gibiino, G., Rizzatti, G., Petito, V., Gasbarrini, A., & Scaldaferri, F. (2019). Akkermansia muciniphila: key player in metabolic and gastrointestinal disorders. *European Review for Medical and Pharmacological Sciences*, 23(18), 8075–8083. https://doi.org/10.26355/eurrev_201909_19024

Moubtahij, Z., McCormack, J., Bourgon, N., Trost, M., Sinet-Mathiot, V., Fuller, B. T., Smith, G. M., Temming, H., Steinbrenner, S., Hublin, J.-J., Bouzouggar, A., Turner, E., & Jaouen, K. (2024). Isotopic evidence of high reliance on plant food among Later Stone Age hunter-gatherers at Taforalt, Morocco. *Nature Ecology & Evolution*, 8(5), 1035–1045. <https://doi.org/10.1038/s41559-024-02382-z>

Puri, S., & Anumakonda, V. (2024). East Meets West: Navigating the Health Challenges of Shifting from Traditional to Western Diets Recent Advances in Clinical Trials. *Recent Adv Clin Trials*, 4, 2024. <https://www.scivisionpub.com/pdfs/east-meets-west-navigating-the-health-challenges-of-shifting-from-traditional-to-western-diets-3545.pdf>

Rabia Topan, & S. Mark Scott. (2023). Sleep: An Overlooked Lifestyle Factor in Disorders of Gut-Brain Interaction. *Current Treatment Options in Gastroenterology*, 21(4), 435–446. <https://doi.org/10.1007/s11938-023-00433-1>

Rakhra, Suguni Loku Galappaththy, Sheetal Bulchandani, & Cabandugama, P. K. (2020). Obesity and the Western Diet: How We Got Here. *Missouri Medicine*, 117(6), 536. <https://pmc.ncbi.nlm.nih.gov/articles/PMC7721435/>

Shively, C. A., Appt, S. E., Vitolins, M. Z., Uberseder, B., Michalson, K. T., Silverstein-Metzler, M. G., & Register, T. C. (2019). Mediterranean versus Western Diet Effects

on Caloric Intake, Obesity, Metabolism, and Hepatosteatosis in Nonhuman Primates. *Obesity*, 27(5), 777–784. <https://doi.org/10.1002/oby.22436>

Temba, Godfrey S, Pecht, T., Kullaya, Vesla I, Vadaq, N., Mosha, M. V., Ulas, T., Kanungo, S., Emst, van, Bonaguro, L., Schulte-Schrepping, J., Mafuru, E., Lionetti, P., Mhlanga, Musa M, van, Cavalieri, D., Leo, Kavishe, R. A., Mmbaga, Blandina T, Schultze, J. L., & Netea, Mihai G. (2025). Immune and metabolic effects of African heritage diets versus Western diets in men: a randomized controlled trial. *Nature Medicine*, 1–14. <https://doi.org/10.1038/s41591-025-03602-0>

Zinöcker, M., & Lindseth, I. (2018). The Western Diet–Microbiome–Host Interaction and Its Role in Metabolic Disease. *Nutrients*, 10(3), 365. <https://doi.org/10.3390/nu10030365>

Cognitive health feature:

Keri Briggs:

Adeva-Andany MM, Calvo-Castro I, Fernández-Fernández C, Donapetry-García C, Pedre-Piñeiro AM. Significance of l-carnitine for human health. *IUBMB Life*. 2017 Aug;69(8):578-594.

The American College of Rheumatology nomenclature and case definitions for neuropsychiatric lupus syndromes. *Arthritis Rheum*. 1999;42(4):599–608.

Benros ME, Sørensen HJ, Nielsen PR, Nordentoft M, Mortensen PB, Petersen L. The Association between Infections and General Cognitive Ability in Young Men - A Nationwide Study. *PLoS One*. 2015 May 13;10(5)

Biessels GJ, Staekenborg S, Brunner E, Brayne C, Scheltens P. Risk of dementia in diabetes mellitus: a systematic review. *Lancet Neurol*. 2006;5(1):64–74.

Boespflug E. L., McNamara R. K., Eliassen J. C., Schidler M. D., Krikorian R. Fish oil supplementation increases event-related posterior cingulate activation in older adults with subjective memory impairment. *The Journal of Nutrition, Health & Aging*. 2016;20(2):161–169.

Caffara P and Santamaria V. The effects of phosphatidylserine in patients with mild cognitive decline. An open trial. *Clin Trials J*, 24 (1987), pp. 109-114

Chang CY, Ke DS, Chen JY. Essential fatty acids and human brain. *Acta Neurol Taiwan*. 2009 Dec;18(4):231-41. PMID: 20329590

Chang M., Jonsson P. V., Snaedal J., et al. The effect of midlife physical activity on cognitive function among older adults: AGES—Reykjavik Study. *The Journals of Gerontology. Series A, Biological Sciences and Medical Sciences*. 2010;65(12):1369–1374.

Chen PL, Lee WJ, Sun WZ, Oyang YJ, Fuh JL: Risk of dementia in patients with insomnia and long-term use of hypnotics: a population-based retrospective cohort study. *PLoS One* 2012;7:e49113.

Cherbuin N, Sachdev P, Anstey KJ. Higher normal fasting plasma glucose is associated with hippocampal atrophy: The PATH Study. *Neurology*. 2012;79(10):1019–26.

Choudhary D, Bhattacharyya S, Bose S. Efficacy and Safety of Ashwagandha (*Withania somnifera* (L.) Dunal) Root Extract in Improving Memory and Cognitive Functions. *J Diet Suppl*. 2017;14:599–612.

Cipriano GL, Grimaldi A, Marra A, Quartarone A, Maresca G. Gut Microbiota and Cognitive Decline: A Scoping Review of Microbial Mechanisms and Adaptive Responses in Dementia. *Front. Aging Neurosci*. 2026.

Colcombe S. J., Erickson K. I., Raz N., et al. Aerobic fitness reduces brain tissue loss in aging humans. *The Journals of Gerontology. Series A, Biological Sciences and Medical Sciences*. 2003;58(2):176–180.

Colovic MB, Krstic DZ, Lazarevic-Pasti TD, Bondzic AM, Vasic VM. Acetylcholinesterase inhibitors: pharmacology and toxicology. *Curr Neuropharmacol*. 2013;11(3):315–335.

Conklin S. M., Gianaros P. J., Brown S. M., et al. Long-chain omega-3 fatty acid intake is associated positively with corticolimbic gray matter volume in healthy adults. *Neuroscience Letters*. 2007;421(3):209–212.

Crichton, Georgina E., Merrill F. Elias, Adam Davey, Kevin J. Sullivan, and Michael A. Robbins. 2014. Higher HDL Cholesterol Is Associated with Better Cognitive Function: the Maine-Syracuse Study. *Journal of the International Neuropsychological Society* 20:961–70.

Crowe M., Andel R., Pedersen N. L., Johansson B., Gatz M. Does participation in leisure activities lead to reduced risk of Alzheimer's disease? A prospective study of Swedish twins. *The Journals of Gerontology. Series B, Psychological Sciences and Social Sciences*. 2003;58(5):249–255.

Deckers K, Schievink SHJ, Rodriquez MMF, van Oostenbrugge RJ, van Boxtel MPJ, Verhey FRJ, Kohler S. Coronary heart disease and risk for cognitive impairment or dementia: systematic review and meta-analysis. *PLoS One*. 2017; 12:e0184244.

Dik MG, Jonker C, Comijs HC, Deeg DJ, Kok A, Yaffe K, et al. Contribution of metabolic syndrome components to cognition in older individuals. *Diabetes Care*. 2007;30(10):2655–60.

Dyall SC. Long-chain omega-3 fatty acids and the brain: a review of the independent and shared effects of EPA, DPA and DHA. *Front Aging Neurosci*. 2015;7:52. 2015; Apr 21.

El-Hattab AW, Zarante AM, Almannai M, Scaglia F. Therapies for mitochondrial diseases and current clinical trials. *Mol Genet Metab*. 2017 Nov;122(3):1-9

El Khoudary SR, Greendale G, Crawford SL, Avis NE, Brooks MM, Thurston RC, Karvonen-Gutierrez C, Waetjen LE, Matthews K. The menopause transition and women's health at midlife: a progress report from the Study of Women's Health Across the Nation (SWAN) *Menopause*. 2019;26:1213–1227.

Erickson K. I., Prakash R. S., Voss M. W., et al. Aerobic fitness is associated with hippocampal volume in elderly humans. *Hippocampus*. 2009;19(10):1030–1039.

Ernst E. The Risk-benefit Profile of Commonly Used Herbal Therapies: *Ginkgo*, St. John's Wort, Ginseng, Echinacea, Saw Palmetto, and Kava. *Ann Intern Med*. 2002;136:42–53.

Fernández-Portero C, Amián JG, de la Bella R, López-Lluch G, Alarcón D. Coenzyme Q10 levels associated to cognitive functioning and executive function in older adults. *J Gerontol A Biol Sci Med Sci*. 2022 Jul 31:glac152.

Ferreira A, Proença C, Serralheiro ML, Araújo ME. The in vitro screening for acetylcholinesterase inhibition and antioxidant activity of medicinal plants from Portugal. *J Ethnopharmacol*. 2006 Nov 3;108(1):31-7.

Ferris L. T., Williams J. S., Shen C. L. The effect of acute exercise on serum brain-derived neurotrophic factor levels and cognitive function. *Medicine and Science in Sports and Exercise*. 2007;39(4):728–734.

García-Carpintero S, Domínguez-Bértalo J, Pedrero-Prieto C, Frontiñán-Rubio J, Amo-Salas M, Durán-Prado M, García-Pérez E, Vaamonde J, Alcain FJ. Ubiquinol Supplementation Improves Gender-Dependent Cerebral Vasoreactivity and

Ameliorates Chronic Inflammation and Endothelial Dysfunction in Patients with Mild Cognitive Impairment. *Antioxidants* (Basel). 2021 Jan 20;10(2):143.

Giurgea, C & Salama, M. Nootropic drugs *Prog in Neuro-Psychopharmacology*, 1977; 1 3–4, (235-247)

Glade, M.J; Smith, K. Phosphatidylserine and the human brain. *Nutrition*, 2015; (31) 6- 781-786)

Graham EL, Clark JR, Orban ZS, Lim PH, Szymanski AL, Taylor C, DiBiase RM, Jia DT, Balabanov R, Ho SU, Batra A, Liotta EM, Korolnik IJ. Persistent neurologic symptoms and cognitive dysfunction in non-hospitalized Covid-19 "long haulers". *Ann Clin Transl Neurol*. 2021 May;8(5):1073-1085.

Gutierrez-Mariscal F.M., Yubero-Serrano E.M., Villalba J.M., Lopez-Miranda J. Coenzyme Q10: From bench to clinic in aging diseases, a translational review. *Crit. Rev. Food Sci. Nutr*. 2018

Haumann BR. Alternative sources for n-3 fatty acids. *Inform* 1998; 9: 1108]19

Hosking DE, et al., MIND not Mediterranean diet related to 12-year incidence of cognitive impairment in an Australian longitudinal cohort study. *Alzheimers Dement*, 2019. 15(4): p. 581–589.

Imanshahidi M, Hosseinzadeh H (2006) The pharmacological effects of salvia species on the central nervous system. *Phytother Res*20:427–437

Johnson E.J. A Possible Role for Lutein and Zeaxanthin in Cognitive Function in the Elderly. *Am. J. Clin. Nutr*. 2012;96:1161S–1165S.

Jongkees BJ, Hommel B, Kühn S, Colzato LS. Effect of tyrosine supplementation on clinical and healthy populations under stress or cognitive demands--A review. *J Psychiatr Res*. 2015 Nov;70:50-7.

Kello N, Anderson E, Diamond B. Cognitive dysfunction in systemic lupus erythematosus: a case for initiating trials. *Arthritis Rheumatol*. 2019;71(9):1413–1425. doi: 10.1002/art.40933.

Kennedy DO. B Vitamins and the Brain: Mechanisms, Dose and Efficacy--A Review. *Nutrients*. 2016;8(2):68. Published 2016 Jan 27. doi:10.3390/nu8020068

Khandaker GM, Jones PB. Cognitive and functional impairment after severe sepsis. *JAMA*. 2011; 305: 673–674.

Kilpi F, Soares ALG, Fraser A, Nelson SM, Sattar N, Fallon SJ, Tilling K, Lawlor DA. Changes in six domains of cognitive function with reproductive and chronological ageing and sex hormones: a longitudinal study in 2411 UK mid-life women. *BMC Womens Health*. 2020;20:177.

Kohn M. L., Schooler C. The reciprocal effects of the substantive complexity of work and intellectual flexibility: a longitudinal assessment. *American Journal of Sociology*. 1978;84:24–52. doi: 10.1086/226739.

Kuboyama T et al., Neuritic regeneration and synaptic reconstruction induced by withanolide A. *Br J Pharmacol*. 2005;144(7):961-971. doi:10.1038/sj.bjp.0706122

Kure CE, Rosenfeldt FL, Scholey AB, et al. Relationships among cognitive function and cerebral blood flow, oxidative stress, and inflammation in older heart failure patients
. *J Card Fail*. 2016;22:548–559.

Letenneur L, Proust-Lima C, Le Gouge A, Dartigues JF, Barberger-Gateau P. Flavonoid intake and cognitive decline over a 10-year period. *Am J Epidemiol*. 2007;165:1364–1371.

Li J, Abdel-Aal EM. Dietary Lutein and Cognitive Function in Adults: A Meta-Analysis of Randomized Controlled Trials. *Molecules*. 2021 Sep 24;26(19):5794.

Lim AS, Kowgier M, Yu L, Buchman AS, Bennett DA: Sleep fragmentation and the risk of incident Alzheimer's disease and cognitive decline in older persons. *Sleep* 2013;36:1027-1032.

Liu X, Morris MC, Dhana K, Ventrelle J, Johnson K, Bishop L, Hollings CS, Boulin A, Laranjo N, Stubbs BJ, Reilly X, Carey VJ, Wang Y, Furtado JD, Marcovina SM, Tangney C, Aggarwal NT, Arfanakis K, Sacks FM, Barnes LL. Mediterranean-DASH Intervention for Neurodegenerative Delay (MIND) study: Rationale, design and baseline characteristics of a randomized control trial of the MIND diet on cognitive decline. *Contemp Clin Trials*. 2021 Mar;102:106270.

Ma, C., Yin, Z., Zhu, P. *et al.* Blood cholesterol in late-life and cognitive decline: a longitudinal study of the Chinese elderly. *Mol Neurodegeneration* 12, 24 (2017).

Margetts G, Kleidonas S, Zaibi NS, Zaibi MS, Edwards KD. Evidence for anti-inflammatory effects and modulation of neurotransmitter metabolism by *Salvia officinalis* L. *BMC Complement Med Ther*. 2022 May 12;22(1):131.

Meade T, Manolios N, Cumming SR, Conaghan PG, Katz P. Cognitive Impairment in Rheumatoid Arthritis: A Systematic Review. *Arthritis Care Res (Hoboken)*. 2018 Jan;70(1):39-52.

Miller LS, Stephen M, Meghan B, Woodard JL, Davey A, Martin P, Poon LW, Jazwinski SM, Green RC, Gearing M *et al.* Cognitive performance in centenarians and the oldest old: norms from the Georgia Centenarian Study. *Neuropsychol Dev Cogn B Aging Neuropsychol Cogn*. 2010; 17: 575–90.

Miranda M, Morici JF, Zanoni MB, Bekinschtein P. Brain-Derived Neurotrophic Factor: A Key Molecule for Memory in the Healthy and the Pathological Brain. *Front Cell Neurosci*. 2019 Aug 7;13:363.

Morris MC, *et al.*, Associations of vegetable and fruit consumption with age-related cognitive change. *Neurology*, 2006. 67(8): p. 1370–6.

Morris MC, *et al.*, MIND diet score more predictive than DASH or Mediterranean diet scores *Alzheimer's & Dementia: The Journal of the Alzheimer's Association*, 2014. 10(4): p. P166

Mortamais M., Portet F., Brickman A. M., *et al.* Education modulates the impact of white matter lesions on the risk of mild cognitive impairment and dementia. *The American Journal of Geriatric Psychiatry*. 2014;22(11):1336–1345.

Ng QX, Loke W, Foo NX, Tan WJ, Chan HW, Lim DY, *et al.* A Systematic Review of the Clinical Use of *Withania somnifera* (Ashwagandha) to Ameliorate Cognitive Dysfunction. *Phytother Res*. 2020;34:583–590.

Ngandu T., von Strauss E., Helkala E. L., *et al.* Education and dementia: what lies behind the association? *Neurology*. 2007;69(14):1442–1450.

Oken BS, Storzbach DM, Kaye JA. The Efficacy of *Ginkgo biloba* on Cognitive Function in Alzheimer Disease. *Arch Neurol*. 1998;55:1409–15.

Oláh C, Schwartz N, Denton C, Kardos Z, Putterman C, Szekanecz Z. Cognitive dysfunction in autoimmune rheumatic diseases. *Arthritis Res Ther*. 2020 Apr 15;22(1):78.

Pengelly A, Snow J, Mills SY, Scholey A, Wesnes K, Butler LR. Short-term Study on the Effects of Rosemary on Cognitive Function in an Elderly Population. *J Med Food*. 2012;15:10–7.

Penn H, Howie AJ, Kingdon EJ, Bunn CC, Stratton RJ, Black CM, Burns A, Denton CP. Scleroderma renal crisis: patient characteristics and long-term outcomes. *QJM*. 2007;100(8):485–494. doi: 10.1093/qjmed/hcm052.

Pennisi M, Lanza G, Cantone M, D'Amico E, Fisicaro F, Puglisi V, Vinciguerra L, Bella R, Vicari E, Malaguarnera G. Acetyl-L-Carnitine in Dementia and Other Cognitive Disorders: A Critical Update. *Nutrients*. 2020 May 12;12(5):1389.

Petersen RC, Lopez O, Armstrong MJ, et al.. Practice guideline update summary: mild cognitive impairment: report of the guideline development, dissemination, and implementation subcommittee of the American Academy of Neurology. *Neurology*. 2018;90(3):126–135. Crossref. PubMed.

Phillips C. Lifestyle Modulators of Neuroplasticity: How Physical Activity, Mental Engagement, and Diet Promote Cognitive Health during Aging. *Neural Plast*. 2017;2017:3589271.

Przybylak M, Grabowski J, Bidzan L. Cognitive functions and thyroid hormones secretion disorders. *Psychiatr Pol*. 2021 Apr 30;55(2):309-321. English, Polish. doi: 10.12740/PP/112470. Epub 2021 Apr 30. PMID: 34365481.

Rondanelli, Mariangela & Opizzi, Annalisa & Faliva, Milena & Mozzoni, Marco & Perna, Simone & Cazzola, Roberta & Savarè, Rita & Grossi, Enzo & Benvenuto, Cestaro. (2011). Mild cognitive impairment in elderly and supplementation with omega 3 fatty acids, melatonin and tryptophan: A review. *Agro Food Industry Hi-Tech*. 22. 23-24.

Sarker MR, Franks SF. Efficacy of curcumin for age-associated cognitive decline: a narrative review of preclinical and clinical studies. *Geroscience*. 2018 Apr;40(2):73-95.

Schreiber S, Kampf-Sherf O, Gorfine M, Kelly D, Oppenheim Y, Lerer B. An open trial of plant-source derived phosphatidylserine for treatment of age-related cognitive decline. *Isr J Psychiatry Relat Sci*, 37 (2000), pp. 302-307

Shinohara M, Yamada M. [Drug-induced Cognitive Impairment]. *Brain Nerve*. 2016 Apr;68(4):421-8. Japanese. doi: 10.11477/mf.1416200415. PMID: 27056860.

Sierpina VS, Wollschlaeger B, Blumenthal M. Ginkgo biloba. *Am Fam Physician*. 2003;68:923–6.

Skvarc DR, Dean OM, Byrne LK, Gray L, Lane S, Lewis M, Fernandes BS, Berk M, Marriott A. The effect of N-acetylcysteine (NAC) on human cognition - A systematic review. *Neurosci Biobehav Rev*. 2017 Jul;78:44-56.

Smith AD, Smith SM, de Jager CA, Whitbread P, Johnston C, Agacinski G, Oulhaj A, Bradley KM, Jacoby R, Refsum H. Homocysteine-lowering by B vitamins slows the rate of accelerated brain atrophy in mild cognitive impairment: a randomized controlled trial. *PLoS One*. 2010 Sep 8;5(9):e12244.

Smith AD, Refsum H. Homocysteine, B Vitamins, and Cognitive Impairment. *Annu Rev Nutr*. 2016 Jul 17;36:211-39.

Smith G, Petersen RC, Parisi JE, et al. Definition, course, and outcome of mild cognitive impairment. *Aging Neuropsychol Cognit*. 1996;3:131–47.

Smith P. J., Blumenthal J. A., Hoffman B. M., et al. Aerobic exercise and neurocognitive performance: a meta-analytic review of randomized controlled trials. *Psychosomatic Medicine*. 2010;72(3):239–252.

Stough Con et al. CoQ10 and Cognition a Review and Study Protocol for a 90-Day Randomized Controlled Trial Investigating the Cognitive Effects of Ubiquinol in the Healthy Elderly. *Frontiers in Aging Neuroscience* 11;2019

Sullivan Mitchell E, Fugate Woods N. Midlife women's attributions about perceived memory changes: observations from the Seattle Midlife Women's Health Study. *J Womens Health Gend Based Med*. 2001;10:351–362.

Tangney CC, et al., Adherence to a Mediterranean-type dietary pattern and cognitive decline in a community population. *Am J Clin Nutr*, 2011. 93(3): p. 601–7.

Tangney C, et al., Accordance to Dietary Approaches to Stop Hypertension (DASH) is associated with slower cognitive decline. *Alzheimer's & Dementia: The Journal of the Alzheimer's Association*, 2013. 9(4): p. P135.

Tayebati SK, Amenta F. Choline-containing phospholipids: relevance to brain functional pathways. *Clin Chem Lab Med*. 2013 Mar 1;51(3):513-21.

Thomas P, Bhatia T, Gauba D, Wood J, Long C, Prasad K et al. Exposure to herpes simplex virus, type 1 and reduced cognitive function. *J Psychiatr Res*. 2013; 47: 1680–1685.

Tranah GJ, Blackwell T, Stone KL, Ancoli-Israel S, Paudel ML, Ensrud KE, Cauley JA, Redline S, Hillier TA, Cummings SR, Yaffe K; SOF Research Group: Circadian activity rhythms and risk of incident dementia and mild cognitive impairment in older women. *Ann Neurol* 2011;70:722-732.

Valls-Pedret C, Sala-Vila A, Serra-Mir M, Corella D, de la Torre R, Martínez-González MÁ, Martínez-Lapiscina EH, Fitó M, Pérez-Heras A, Salas-Salvadó J, Estruch R, Ros E. Mediterranean Diet and Age-Related Cognitive Decline: A Randomized Clinical Trial. *JAMA Intern Med*. 2015 Jul;175(7):1094-1103. doi: 10.1001/jamainternmed.2015.1668. Erratum in: *JAMA Intern Med*. 2018 Dec 1;178(12):1731-1732. PMID: 25961184.

van Soest APM, van de Rest O, Witkamp RF, Cederholm T, de Groot LCPGM. DHA status influences effects of B-vitamin supplementation on cognitive ageing: a post-hoc analysis of the B-proof trial. *Eur J Nutr*. 2022 Oct;61(7):3731-3739.

Verghese J., Lipton R. B., Katz M. J., et al. Leisure activities and the risk of dementia in the elderly. *The New England Journal of Medicine*. 2003;348(25):2508–2516.

Wolf PA. Contributions of the Framingham Heart Study to stroke and dementia epidemiologic research at 60 years. *Arch Neurol*. 2012; 69:567–571.

Yarrow J. F., White L. J., McCoy S. C., Borst S. E. Training augments resistance exercise induced elevation of circulating brain derived neurotrophic factor (BDNF) *Neuroscience Letters*. 2010;479(2):161–165.

Zilliox LA, Chadrsekaran K, Kwan JY, Russell JW. Diabetes and Cognitive Impairment. *Curr Diab Rep*. 2016 Sep;16(9):87.

Sophie Barrett:

Alzheimer's Society (2023) *Dementia UK: Update*. London: Alzheimer's Society.

Boh, B., Berovic, M., Zhang, J. and Lin, Z.B. (2007) 'Ganoderma lucidum and its pharmaceutically active compounds', *Biotechnology Annual Review*, 13, pp. 265–301.

Cryan, J.F., O'Riordan, K.J., Cowan, C.S.M. et al. (2019) 'The microbiota-gut-brain axis', *Physiological Reviews*, 99(4), pp. 1877–2013.

Duru, K.C., Kovaleva, E.G. and Danilova, I.G. (2019) 'The pharmacological potential and possible molecular mechanisms of action of *Inonotus obliquus* from preclinical studies', *Heliyon*, 5(11), e03053.

Glade, M.J. and Smith, K. (2015) 'Phosphatidylserine and the human brain', *Nutrition*, 31(6), pp. 781–786.

Jacka, F.N., O'Neil, A., Opie, R. et al. (2015) 'A randomised controlled trial of dietary improvement for adults with major depression (the "SMILES" trial)', *BMC Medicine*, 15, 23.

Livingston, G., Huntley, J., Sommerlad, A. et al. (2020) 'Dementia prevention, intervention, and care: 2020 report of the Lancet Commission', *The Lancet*, 396(10248), pp. 413–446.

Nagano, M., Shimizu, K., Kondo, R. et al. (2010) 'Reduction of depression and anxiety by 4 weeks *Hericium erinaceus* intake', *Biomedical Research*, 31(4), pp. 231–237.

Ngandu, T., Lehtisalo, J., Solomon, A. et al. (2015) 'A 2 year multidomain intervention of diet, exercise, cognitive training, and vascular risk monitoring versus control to prevent cognitive decline', *The Lancet*, 385(9984), pp. 2255–2263.

Panossian, A. and Wikman, G. (2010) 'Effects of adaptogens on the central nervous system and the molecular mechanisms associated with their stress—protective activity', *Pharmaceuticals*, 3(1), pp. 188–224.

Roupas, P., Keogh, J., Noakes, M. et al. (2012) 'The role of edible mushrooms in health: evaluation of the evidence', *Journal of Functional Foods*, 4(4), pp. 687–709.

Stough, C., Lloyd, J., Clarke, J. et al. (2008) 'The chronic effects of an extract of *Bacopa monnieri* on cognitive function in healthy human subjects', *Psychopharmacology*, 156(4), pp. 481–484.

Tan, M.S., Yu, J.T., Tan, C.C. et al. (2015) 'Efficacy and adverse effects of *Ginkgo biloba* for cognitive impairment and dementia: a systematic review and meta-analysis', *Journal of Alzheimer's Disease*, 43(2), pp. 589–603.

Valverde, M.E., Hernández-Pérez, T. and Paredes-López, O. (2015) 'Edible mushrooms: improving human health and promoting quality life', *International Journal of Microbiology*, 2015, 376387.

Catherine Gorman:

https://fingertips.phe.org.uk/documents/Dementia_Surveillance_England.html

<https://www.alzheimers.org.uk/about-us/dementia-UK-leading-cause-of-death>

[https://www.thelancet.com/article/S0140-6736\(20\)30367-6/fulltext](https://www.thelancet.com/article/S0140-6736(20)30367-6/fulltext)

<http://orca.cf.ac.uk/100175/1/Treatments%20in%20Alzheimers.pdf>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4221920/>

[http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(15\)60461-5/fulltext](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(15)60461-5/fulltext)

<https://alzres.biomedcentral.com/articles/10.1186/s13195-020-00661-y>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3705810/>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7199507/>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3705810/>

<https://pubmed.ncbi.nlm.nih.gov/19523795/>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2781139/>

<https://www.frontiersin.org/articles/10.3389/fnagi.2020.00103/full>

<http://jamanetwork.com/journals/jama/fullarticle/194636>

<https://pubmed.ncbi.nlm.nih.gov/39911400/>

<https://www.sciencedirect.com/science/article/pii/S0271531726000072>